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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,448	01/20/2004	Paul L. Mitchell	38423.0022	3049

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EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/761,448

Applicant(s)

MITCHELL ET AL.

Examiner

Teresa J. Walberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/16/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the present drawings are informal, in that they contain numerals that appear to be hand drawn. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.
2. Applicant's election without traverse of Group I, claims 1-30, in the reply filed on 07 February 2005 is acknowledged.
3. Claim 31 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07 February 2005.
4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Frisch et al (2,737,370).

Frisch et al disclose (see Figs. 1-3) a heat exchanger including at least one plate fin (17) having a first side, a second side, and at least one opening, at least one fin collar (18) disposed on the plate fin (17), the fin collar having an upstanding wall (18), having a plurality of slits (27) disposed substantially equidistantly around a perimeter, and at least one tube (16) for conveying a pressurized fluid disposed through the at least one opening, the tube (16) being round or circular (Fig. 3), and the slits (27) having a rectangular shape.

7. Claims 1-6, 8, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Cobb (2,089,340).

Cobb discloses (see Fig. III) a heat exchanger including at least one plate fin (1) having a first side, a second side, and at least one opening (4), at least one fin collar (3) disposed on the plate fin (1), the fin collar having an upstanding wall (3), having a plurality of slits (12) disposed substantially equidistantly around a perimeter, and at least one tube (2) for conveying a pressurized fluid disposed through the at least one opening, the tube (2) being round or circular or oval

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(page 1, col. 2, lines 49-51), and the slits (12) having an angled shape (Fig. II), and the fin and collar being copper or aluminum alloy (page 2, col. 2, line 72).

8. Claims 1-3, 5, 6, 8, 10, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Plumeri et al (2,656,808).

Plumeri et al disclose (see Figs. 1 and 15) a heat exchanger including at least one plate fin (2) having a first side, a second side, and at least one opening (3), at least one fin collar (4) disposed on the plate fin (2), the fin collar having an upstanding wall (4), having a plurality of slits (Fig. 1 and 15) disposed substantially equidistantly around a perimeter, and at least one tube (1) for conveying a pressurized fluid disposed through the at least one opening (3), the tube (1) being round or circular (Fig. 2), and the slits (at 5) having an angled shape (Fig. 15), and the tube and the fin and collar being copper or aluminum alloy (col. 3, lines 62-72).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9, 11, 12, 16-18, 20, 21, and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plumeri et al (2,656,808) in view of Blystone et al (4,449,581).

Plumeri et al disclose the claimed structure with the exception of a cladding layer and the fin being attached to the tube by brazing. However, Blystone et al teach that it is known in the art to provide cladding layers in heat exchanger and to secure heat exchanger fins and tubes together by brazing. It would have been obvious in view of Blystone to provide a cladding layer in the heat exchanger of Plumeri et al and to secure the tubes and fins together by brazing in order to prevent damage to the device by more securely fastening the parts together.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plumeri et al (2,656,808) in view of Blystone et al (4,449,581) as applied to claims 9, 11, 12, 16-18, 20, 21, and 23-30 above, and further in view of Cobb (2,089,340).

Plumeri et al in view of Blystone et al disclose the claimed structure with the exception of the tubes being oval. However, Cobb teaches that it is known in the art to use oval tubes in heat exchangers. It would have been obvious in view of Cobb to use oval tubes in the heat exchanger of Plumeri et al in view of Blystone et al in order to increase the surface area of the tube.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plumeri et al (2,656,808) in view of Blystone et al (4,449,581) as applied to claims 9, 11, 12, 16-18, 20, 21, and 23-30 above, and further in view of Frisch et al (2,737,370).

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Plumeri et al in view of Blystone et al disclose the claimed structure with the exception of the slits being rectangular. However, Frisch et al teaches that it is known in the art to use rectangular slits in fin collars. It would have been obvious in view of Frisch et al to use rectangular slits in the fin collars of Plumeri et al in view of Blystone et al in order to increase the contact area of the fin with the tube and thus increase the heat transfer.


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McIntyre, Cleaveland, Young et al, and Dinh are cited to show fins attached to tubes by collars having slits.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw